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(71) Applicant (for all designated States except US): E.I. DUPONT DE NEMOURS AND COMPANY [US/US]; 1007 MARKET STREET, WILMINGTON, DE 19898 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): CHOUDHURY, Biswajit [CA/CA]; 1005-175 Bath Road, Kingston,

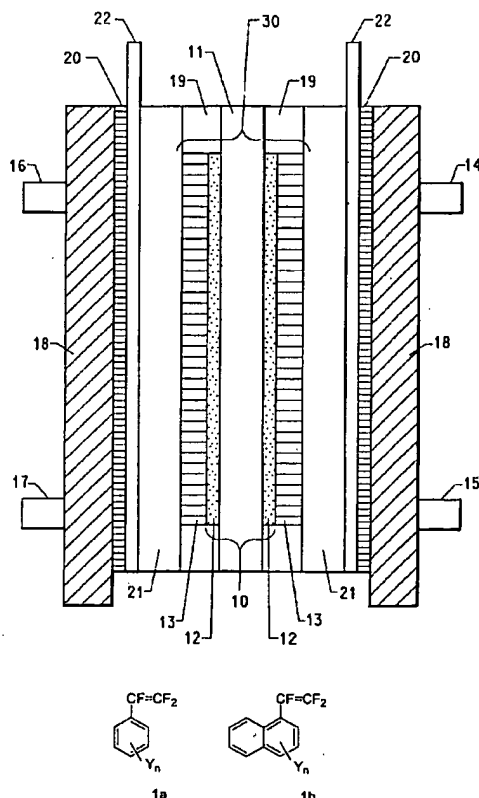
Ontario K7M 7K9 (CA). ROELOFS, Mark, Gerrit [US/US]; 514 Hemlock Drive, Hockessin, DE 19707 (US). YANG, Zhen-Yu [US/US]; 177 Thompson Drive, Hockessin, DE 19707 (US).

(74) Agent: FICKES, Daphne, P.; E. I. DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, 4417 Lancaster Pike, Wilmington, DE 19805 (US).

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(54) Title: TRIFLUOROSTYRENE CONTAINING COMPOUNDS GRAFTED TO BASE POLYMERS, AND THEIR USE AS POLYMER ELECTROLYTE MEMBRANES



(57) Abstract: A fluorinated ion exchange polymer prepared by grafting a monomer on to a base polymer, wherein the grafting monomer is selected from the group consisting of structure 1a, structure 1b and mixtures thereof, (INSERT 1a and 1b HERE) wherein Y is selected from the group consisting of  $-\text{R}_f\text{SO}_2\text{F}$  (sulfonyl fluoride),  $-\text{R}_f\text{SO}_3\text{M}$  (fluorosulfonic acid or salt),  $\text{R}_f\text{SO}_2\text{NH}_2$  (fluorosulfonamide), and  $-\text{R}_f\text{SO}_2\text{N}(\text{M})\text{SO}_2\text{R}_f^2$  (imide); wherein M is H, an alkali cation, or ammonium; and  $\text{R}_f$  and  $\text{R}_f^2$  groups are perfluorinated or partially fluorinated, and may optionally include ether oxygens; and n is between 1 and 2 for 1a, or n is between 1 and 3 for 1b. These ion exchange polymers are useful in preparing catalyst coated membranes and membrane electrode assemblies used in fuel cells.



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